



**PCC Diabetes Management System  
(APCL)  
Version 3.0**

**User's Manual**

**February 1997**

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# Table of Contents

<b>INTRODUCTION.....</b>	<b>1</b>
<b>THE IHS DIABETES REGISTER.....</b>	<b>3</b>
<b>INSTALLING THE IHS DIABETES REGISTER.....</b>	<b>5</b>
INSTALLATION .....	5
ADDING AUTHORIZED USERS TO YOUR REGISTER .....	5
<b>ENTERING PATIENTS INTO THE REGISTER .....</b>	<b>7</b>
ENTERING PATIENTS MANUALLY.....	7
TRANSFERRING PATIENTS FROM A FILE MANAGER FILE .....	7
TRANSFERRING PATIENTS FROM A Q-MAN-GENERATED SEARCH TEMPLATE.....	8
PERIODIC ADDITION OF NEW CASES TO YOUR REGISTER.....	10
Identifying New Cases.....	10
<b>ENTRY OF REGISTER DATA .....</b>	<b>13</b>
ADDING DATA ITEMS TO THE DIABETES REGISTER .....	14
<b>CASE MANAGEMENT REPORT GENERATION .....</b>	<b>15</b>
CASE SUMMARY, INDIVIDUAL.....	15
CASE SUMMARY, MULTIPLE .....	15
MASTER LIST.....	16
PATIENT AND STATISTICAL REPORTS .....	16
REGISTER PATIENT GENERAL RETRIEVAL (LISTER).....	17
DISPLAY DATA FOR A PATIENT’S LAST VISIT .....	18
<b>GENERATING RECALL LETTERS FROM THE CASE MANAGEMENT SYSTEM .....</b>	<b>19</b>
<b>RETRIEVAL OF CLINICAL DATA FROM THE PCC</b>	
<b>FOR PATIENTS IN THE IHS DIABETES REGISTER .....</b>	<b>21</b>
COHORT GENERATION EXAMPLES.....	21
Example 1: All Active Patients.....	21
Example 2: NIDDM Patients Age 65 and Older .....	21
Q-Man Search Examples.....	22
Special Q-Man Outputs.....	24
<b>DIABETES PROGRAM AUDIT FOR QUALITY ASSURANCE AND QUALITY IMPROVEMENT.....</b>	<b>25</b>
THE DIABETES PROGRAM QA AUDIT REPORT .....	25
DEFINITIONS AND CRITERIA FOR AUDIT ITEMS .....	26
Demographic Data .....	27
Clinical Data.....	27
Examinations .....	28
Education.....	29
Therapy.....	29
Other Data .....	29
Laboratory Data .....	30
INITIAL SETUP INSTRUCTIONS.....	30
DM Audit Insulin Drugs .....	31
DM Audit Oral Hypoglycemics .....	32
DM Audit Ace Inhibitors .....	32

DM Audit Glucose Lab Tests .....	33
Sample Session for Adding Glucose to the Blood Sugar Group.....	34
SAMPLE AUDIT REPORTS .....	34
GENERATION OF A PATIENT COHORT FOR USE IN THE AUDIT REPORT.....	38
Using All IDDM and NIDDM Patients as Your Audit Cohort .....	38
Generating a Random Sample as Your Audit Cohort.....	39
Generating an Audit Sample When You Do Not Have a Diabetes Register.....	39
<b>HEALTH SUMMARY ITEMS FOR DIABETES CARE .....</b>	<b>41</b>
CASE MANAGEMENT SYSTEM REGISTERS .....	41
DIABETES STANDARD SUMMARY .....	41
Flowsheet Setup .....	42
HEALTH MAINTENANCE REMINDERS .....	42
<b>RECORDING DIABETES-RELATED DATA IN THE PCC.....</b>	<b>43</b>
PURPOSE OF VISIT .....	43
PROBLEM LIST .....	43
LABORATORY TESTS .....	43
HEALTH FACTORS .....	44
EXAMINATIONS.....	44
EDUCATION TOPICS.....	45
USE OF CUSTOMIZED PCC FORMS FOR DIABETES CLINIC VISITS .....	45

# Introduction

The IHS Diabetes Management System is a group of computer programs designed to facilitate individual diabetes patient care and diabetes program management.

Features of the Diabetes Management System include:

- A Diabetes Register using the PCC Case Management System
- A Diabetes Flowsheet included on the PCC Health Summary
- Monitoring and prompting of important care items on the Health Summary
- Standard nomenclature for recording diabetes exams and education on PCC forms
- An automated Diabetes Program Audit report
- Case Management System report options
- Access to all PCC clinical data

The system capitalizes on data contained in the PCC and minimizes redundant data entry for local Diabetes Coordinators. Detailed instructions for implementing and utilizing the Diabetes Management System's features are included in this manual.

The Diabetes Management System was developed jointly by the PCC Development Team in Tucson, the IHS Diabetes Program, and health-care providers involved in direct patient care.

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# The IHS Diabetes Register

The standard IHS Diabetes Register is a tool for maintaining a list of your diabetes patients, their disease type, complications, family members, and case review dates. The Diabetes Register facilitates the addition, inactivation, and removal of patients from the list; entry of monitoring data for patients on the list; printing of case summaries; generation of reports; and retrieval of virtually all clinical data entered into the PCC for patients on the register.

The IHS Diabetes Register uses the PCC Case Management System, which provides considerable flexibility for specifying the data to be monitored. It also permits users to establish their own lists and definitions in support of these data items. The IHS Diabetes Register helps to simplify the process of creating a Case Management-based register by providing a core set of data items with predefined lists and standard definitions. You are in no way limited to this core set of data items and the lists that accompany them. You may add additional Case Management data items and expand the lists provided; however, you will want to be careful not to add so much to your register that it becomes cumbersome and requires extensive routine data entry. Remember that you always have access to all existing PCC demographic and clinical data without keeping these items in the Diabetes Register.

To facilitate installation of the IHS Diabetes Register, a menu option is included on the Case Management main menu that will fully install the register for you. No knowledge of Case Management or special action is required on your part. (See page 5 for detailed installation instructions.) At the conclusion of the process, you will have a fully functioning Diabetes Register, ready for entry of patients and their data.

The following data items are included in the IHS Diabetes Register:

## **Patient Status**

Active  
Inactive  
Transient  
Unreviewed  
Non-IHS Care  
Deceased

## **Diagnosis**

NIDDM  
IDDM  
Impaired Glucose Tolerance  
Gestational DM

## **Complications**

CVA (Stroke)  
End Stage Renal Disease  
Fixed Proteinuria  
High Risk Foot  
Hypertension  
Laser Tx for Retinopathy  
Major Amputation(s)  
Microalbuminuria  
Minor Amputation(s)  
Myocardial Infarction  
Retinopathy

**Facility Where Patient  
Is Routinely Followed**

RPMS Facility Name

**Family Members**Must be in Patient Registration  
file**Last Review**

Date

**Next Review**

Date

You may add any of the 17 available components listed on page 14 or delete data items as needed. Instructions for this process are included on pages 13 to 14.

Some Service Units may already have a Diabetes Register using Case Management or File Manager. You may continue using your existing register or convert to the IHS Diabetes Register. The main advantage of using the IHS Diabetes Register is its link to all of the data in the PCC. This link eliminates redundant entry of visit-related data; for example, lab values, measurements, patient education topics, and health factors. Also, the IHS Register provides for standardization of data elements.

Complete instructions for installing the IHS Diabetes Register are included on the following page. If you have an existing diabetes register, please note the following:

- If your current register is on your facility's RPMS computer and you want to convert to the IHS Diabetes Register:
  - The conversion process will retain your existing patients and their data if your current register is **Case Management-based**.
  - You will need to transfer the patients in your current register to the new register if your current register is **File Manager-based** and uses the IHS Patient Registration file. Only patient identification data will be transferred in this process; other data items will not be transferred. Instructions for this transfer are on pages 7 to 8.
- If your current register is PC-based, it cannot be converted automatically to the IHS Diabetes Register.

If you are uncertain which system your current register uses, contact your Site Manager or Area Diabetes Control Officer for assistance.

# Installing the IHS Diabetes Register

Installation of the IHS Diabetes Register should be coordinated with your local Site Manager. You or the Site Manager must have access to the Case Management System to proceed. Also, you must be running Case Management version 2.0 or higher. Your Site Manager can determine if you have the correct software to initiate this process.

## Installation

In the Case Management System, select the option to Install IHS Diabetes Register. When asked if you want to install the IHS Diabetes Register:

1. **Respond NO if you are converting an existing Case Management-based Diabetes Register.** You will then be prompted for the name of your current register. After you have entered the register's name, the installation program will identify differences between the current and new registers and ask you which of your existing data items you want to include in the new register. It will also ask you if you want to convert your existing diagnosis and complication lists to the new IHS lists. If you respond YES, the system will display each of your existing list entries and ask you to select an entry from the corresponding IHS list to replace your list entry. If a good match does not exist for a particular list entry, you will have the option of retaining your list entry or deleting it. The system will automatically link your existing patient data to the appropriate list entries, thus retaining the patients and their data from your former diabetes register.
2. **Respond YES if you do not have an existing register or if you have a File Manager-based register.** The system will install the new IHS Diabetes Register and inform you when the process is complete. This process will take no more than a few seconds. When finished, the register will be ready for you to add patients and enter register data. (See pages 7 to 8 for instructions on transferring patients from your existing File Manager register to the new register.)

## Adding Authorized Users to Your Register

Access to the IHS Diabetes Register is limited to individuals whom you specifically identify. To add authorized users, including yourself, you must select the Case Management menu option Add Authorized Users. You will be prompted to enter the names of RPMS users who will be using this register.

For security reasons, only the creator of the register can add authorized users, modify register components, or delete the register.

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# Entering Patients into the Register

After installing the IHS Diabetes Register, you will need to add patients to it. There are three ways to add patients:

- enter patients manually, one at a time
- transfer patients from a File Manager file\*
- transfer patients from a Q-Man-generated search template\*

\* **Note:** To perform these transfer processes, you will be required to use Q-Man, the RPMS query tool. Q-Man may be accessed from the main menu of the Case Management System. You will need access to Q-Man as one of your menu options. Your Site Manager should be able to assist you in gaining access to Q-Man.

Each method for entering patients is described below. Remember, if you are converting an existing Case Management-based diabetes register to the new IHS Diabetes Register, it is not necessary to re-enter patients in the new register. The patients will be added automatically.

## Entering Patients Manually

You may want to enter patients one at a time from an existing source, such as 3 x 5 cards or a list that you have been maintaining manually. Begin by selecting the Case Management option Add/Delete Patients. At the prompt requesting the register name, type IHS DIABETES. From the Patient Data Management menu, select Add Patient(s). You may then enter a patient by name or chart number. Patients must be in your facility's Patient Registration file in order to be added to your register. After adding the patient's name or chart number, you may enter other register data, such as diagnosis and complications.

## Transferring Patients

### From a File Manager File

You may transfer patients from your File Manager diabetes register to the new IHS Diabetes Register. To do so, select Q-Man from the Case Management System main menu. Choose the Q-Man Search option and type LIVING PATIENTS as the subject of your search.

At the attribute prompt, enter the word FILE. You will be asked the name of the File Manager file you wish to access. Enter the File Manager file name of your existing diabetes register. Your Site Manager can help you determine the correct response.

You will be asked how Q-Man should use your file. From the four options presented, select option 1, which indicates that the patients must be in the file you have identified.

You will then be prompted for another attribute. Press the RETURN key to bypass this prompt. Several Q-Man Output Options will be displayed. Select option 4 to store search results in a FileMan template. When prompted to name your template or cohort, type PTS FOR DM REGISTER. When asked if you want to add this template, respond YES. You may bypass the prompts for describing your template by pressing the ENTER key. When asked if you want to run the search in the background mode, respond NO. Q-Man will then display each patient from your current register as they are added to your template.

Exit Q-Man and return to the Case Management System main menu. From the main menu, select the Add/Delete Patients option. Then select Data Transfer from a Search Template on the Patient Data Management menu. When prompted for the name of your template, type PTS FOR DM REGISTER. You will then be asked for the name of the register to which they are to be transferred. Type IHS DIABETES. You will be asked if you want to transfer these patients as Active, Inactive, or Unreviewed. Confirm your choices when prompted. The transfer process will begin after you have confirmed your choices and may take several minutes to complete for large sets of patients.

## Transferring Patients from a Q-Man-Generated Search Template

This mechanism allows you to quickly identify all diabetes patients who are active at your facility, based on PCC data, and load them into your IHS Diabetes Register. Patients are considered active if they have had three or more visits for diabetes in the past three years. The specific Q-Man dialogue to accomplish this search follows. User responses and instructions are in bold type.

```
Subject:  LIVING PATIENTS
Attribute of Living Patients:  DX
Enter DX:  250.00-250.91
    250.00      Diabetes Uncompl Type II/NIDDM      Okay?:  YES
    250.91      Diab W Compl NOS Type I/IDDM      Okay?:  YES
ICD codes in this range =>
[Q-Man lists all codes between 250.00 and 250.91]
Enter Another DX:  648.80-648.84
    648.80      Abn Glucose in Preg-Unsp      Okay?:  YES
    648.84      Abn Glucose-Postpartum      Okay?:  YES
ICD codes in this range=>
[Q-Man lists all codes between 648.80 and 648.84]
Enter Another DX:  (Press RETURN to bypass this prompt)
Want to save this group for future use?  NO
First condition of Diagnosis:  SINCE
Exact Date:  (Enter the date 3 years ago)
```

---

Next condition of Diagnosis: **AT LEAST**  
Value: **3**  
Next condition of Diagnosis: **(Press RETURN to bypass)**  
Attribute of Living Patients: **(Press RETURN to bypass)**

**\*\*\* Q-Man Output Options \*\*\***

Select one of the following:

- 1 DISPLAY results on the screen
- 2 PRINT results on paper
- 3 COUNT 'hits'
- 4 STORE results of a search in a FM search template
- 5 SAVE search logic for future use
- 6 R-MAN special report generator
- 9 HELP
- 0 EXIT

Your choice: **4 - Store Results of Search in FileMan Template**

Enter the name of the search template: **PTS FOR IHS DM REGISTER**

Are you adding 'PTS FOR IHS DM REGISTER' as a new sort  
template? **YES**

Description: **(Press RETURN to bypass)**

Want to run this task in background? **NO**

Q-Man will then display each patient that matches the specified criteria as it stores the patients in your template called PTS FOR IHS DM REGISTER. When finished, the number of patients stored is displayed.

Next, exit Q-Man and return to the Case Management System main menu. Select the Add/Delete Patients menu option, enter the name of the new Diabetes Register, and then select the Data Transfer from a Search Template option. You will be prompted to identify your search template. Respond by typing PTS FOR IHS DM REGISTER. You will then be asked which register they are to be moved into. Respond by entering IHS DIABETES. You will also be asked to specify the register status of these patients: Active, Inactive, or Unreviewed. Confirm your choices when prompted. The system will then move all of the patients from the search template into the IHS Diabetes Register and assign them the status you have specified.

When this process is complete, you should review the patients transferred into the register to determine their appropriateness. You may delete patients or change their status to Inactive, Transient, Unreviewed, Deceased, or Non-IHS using the Data Entry option on the Case Management main menu. You may also add any patients that were not automatically transferred into the register by using the manual process described on page 7.

## Periodic Addition of New Cases to Your Register

After your register is installed and your initial group of patients has been entered, you may enter newly diagnosed cases using the manual entry process described on page 7.

### Identifying New Cases

No mechanism exists for adding patients automatically to the IHS Diabetes Register; therefore, it is critical that the local Diabetes Coordinator is notified as new patients are diagnosed or move into the service area. The four methods of identification are described below.

**Referral Copy of PCC Form.** When a health-care provider diagnoses a new case of diabetes, diagnoses a new complication, or is aware that the patient being seen for diabetes is new to the facility, the provider should indicate a referral to the Diabetes Coordinator in the lower right-hand section of the PCC Encounter Form and forward the referral (yellow) copy of the form to the Diabetes Coordinator. Medical Records staff should be alert to these referrals and forward the yellow copy to the Diabetes Coordinator if the provider of service has not already done so.

**Notation on Health Summary or Case Summary.** Some facilities use the PCC Health Summary and/or the Case Management System Case Summary as “turn-around” documents. Following review of the Health Summary or Case Summary, the provider may make notations on the Summary regarding new diabetes cases or new diabetes complications and forward the Summary to the Diabetes Coordinator for updating the register.

**Q-Man Search.** Using Q-Man, you can print a list of newly diagnosed cases or new complications since your last update of the register. The list should be reviewed by the Diabetes Coordinator and appropriate entries made in the register. The following Q-Man dialogue is used to find new cases or complications. User responses and instructions are in bold type.

```
Subject:  LIVING PATIENTS
Attribute of Living Patients:  DX
Enter DX:  (Enter appropriate ICD code ranges for diabetes and
diabetes complications.)
Enter Another DX:  (Press RETURN to bypass after entering all
codes.)
Want to save this group for future use?  YES
Enter name for this taxonomy:  DM & COMPLICATIONS CODES
First condition of Diagnosis:  FIRST
How many?  1
Next condition of Diagnosis:  SINCE
```

Exact Date: **(Enter date you last updated register with new cases and/or complications.)**  
Next condition of Diagnosis: **(Press RETURN to bypass.)**  
Attribute of Living Patients: **(Press RETURN to bypass.)**

**\*\*\* Q-Man Output Options \*\*\***

Select one of the following:

- 1 DISPLAY results on the screen
- 2 PRINT results on paper
- 3 COUNT 'hits'
- 4 STORE results of a search in a FM search template
- 5 SAVE search logic for future use
- 6 R-MAN special report generator
- 9 HELP
- 0 EXIT

Your choice: **2 - Print Results**

Device: **(Enter printer device number. See Site Manager for assistance.)**

After you have printed the results of your Q-Man search, you can manually add the patients on your list to the Diabetes Register. (See page 7 for instructions on entering patients manually.)

**Mailman Bulletin.** Each time a diagnosis of diabetes or one of the standard complications is entered into the PCC, a program will determine if this is a new case or new complication for the patient at your facility. If it is new, a Bulletin will be generated in the RPMS Mailman System announcing the new case. The Bulletin, or Mail Message, will be automatically routed to the local Diabetes Coordinator. Each time the Coordinator signs on to RPMS, the Coordinator will be notified that new mail messages are waiting to be read. If you are not already using Mailman within your facility, you will need to discuss this capability with your Site Manager.

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## Entry of Register Data

The IHS Diabetes Register has been designed to minimize the data entry required for maintenance. One key to achieving this goal is to optimize the use of data entered through the PCC process. Another key is to limit the non-PCC data maintained in the register to as few items as possible and to items that require infrequent updating after initial entry into the register.

Accordingly, very few data items are included in the register itself. These items should be entered when you add patients to the register and modified as needed. To enter or modify data, select the Data Entry option on the Case Management System main menu. Then enter the patient name or chart number and select the data to be entered or modified.

The core data items of the Diabetes Register are relatively static and require infrequent updates. Each of the core data items is described below.

**Patient Status on Register.** Categories for this data item are Active, Inactive, Transient, Unreviewed, Deceased, and Non-IHS. Most of the register reports include only active patients.

**Initial Entry Date.** The system will automatically record the date on which the patient was entered into the register. You may override this date with a date from your records.

**Facility where Followed.** Enter the name of the IHS or tribal facility/location where the patient usually receives diabetes care. The facility entered must be in the RPMS Location Table. If you enter a facility name that is not recognized by the system, you will be notified and prompted to enter another name.

**Case Manager.** This is an optional item. If several case managers will be working with the patients in your diabetes register, you may want to enter the case manager for each patient. You will then be able to sort patients by their case managers.

**Primary Care Provider.** You may want to indicate each patient's primary care provider. This is an optional item.

**Public Health Nurse.** This data item is optional. If you would like to track patients by the public health nurse charged with their care, you will want to include this field in your register.

**Diagnosis.** Enter the patient's type of diabetes. Only one diagnosis may be entered for each patient.

**Dx/Onset Date.** Enter the earliest known date of the patient's diagnosis of diabetes.

**Complications and Onset Date.** For each patient, enter as many complications as appropriate from the list provided. Then enter the earliest known date of the patient's complication(s). If the onset date is not available from the patient's records, you may leave it blank.

**Family Members.** This optional field provides a mechanism for linking family members to the diabetes patients on the register. For example, you may link children to their diabetic mothers. Only family members who are registered at the facility where you are entering this data may be included.

**Relationship.** Specify the relationship of each linked family member by choosing from the list provided.

**Related Dx.** For each linked family member you have included, enter YES, NO, or UNKNOWN to indicate the member's diabetes status.

**Last Review Date.** Enter the date of the patient's last case review.

**Next Review Date.** Enter the date for the patient's next case review.

## Adding Data Items To the Diabetes Register

In addition to the core data items, you may elect to monitor additional data items in your register. Keep in mind that the more items you attempt to monitor, the more burdensome your data entry requirement becomes. The following list includes the data items that you may add to your register. The arrows indicate items that are already included as the core data for the register.

- |                        |   |                    |   |
|------------------------|---|--------------------|---|
| 1) Care Plans          | ← | 10) Interventions  |   |
| 2) Case History        |   | 11) Measurements   |   |
| 3) Case Review Dates   | ← | 12) Medications    |   |
| 4) Comments            |   | 13) Recall Dates   |   |
| 5) Complications       | ← | 14) Register Data  | ← |
| 6) Diagnoses           | ← | 15) Risk Factors   |   |
| 7) Diagnostic Criteria |   | 16) Services       |   |
| 8) Etiology            |   | 17) All Data Types |   |
| 9) Family Members      | ← |                    |   |

To add other data items to your register, use the Create/Modify Register Structure option on the Case Management main menu. Please refer to the Case Management System (version 2.0) user's manual for detailed instructions on modifying the register.

# Case Management Report Generation

Numerous reports can be generated from the IHS Diabetes Register through the Case Management System's Report Generation feature. These reports contain a combination of demographic data and the register data that you have entered.

To generate reports of your register data, use the Report Generation option on the Case Management System main menu. The following reports are available. Each report option is described in detail below.

```
*****
*           IHS DIABETES REGISTER           *
*****

                STATISTICAL REPORTS

CS    Case Summary, Individual
MS    Case Summary, Multiple
ML    Master List
PR    Patient and Statistical Reports
GEN   Register Patient General Retrieval (Lister)
LVST  Display Data for a Patient's Last Visit
```

## Case Summary, Individual

The Case Summary displays or prints all data contained in a Case Management register for a single patient. For the IHS Diabetes Register, this includes demographic information, register status data, diabetes diagnosis, complications, and family members. The Case Summary also includes the patient's PCC Problem List. To produce an individual Case Summary, select the Individual Case Summary menu option and enter the patient's name or chart number. The Case Summary is generated instantaneously. You have the option of including a PCC Health Summary at the end of the Case Summary.

For this report, you may retrieve data for all patients on the Diabetes Register regardless of status.

## Case Summary, Multiple

This option allows you to produce Case Summaries (described above) for all patients or a subset of patients in your IHS Diabetes Register. After selecting the option, you will be asked to specify a sorting order for the Case Summaries. You may sort by Patient (alphabetical order), Community of Residence, Facility where Followed, Case Manager, or Next Review Date. After selecting the sort order, you will specify whether to retrieve data for everyone in the register or for a

subset of patients. For example, if you select Community for the sort order, you can print all patients in the register grouped by community or you can choose a specific community in order to print only those patients within that particular community. Likewise, if you select Next Review Date as your sort order, you can specify a time period and list only those patients whose next review date falls in that range or list all patients in the register in the order of their next review date. This option retrieves only active patients. All other patients are excluded. You may save your report results in a search template for later data retrievals.

## Master List

The Case Management Master List produces a list of all active patients and displays their Chart Number, Case Manager, Public Health Nurse, and Next Review Date. You may sort the list by Patient Name (alphabetical order), Age, Community of Residence, Case Manager, Public Health Nurse, Sex, Status\*, or Facility where Followed. You may also sort by a combination of these register items; for example, alphabetical order by Patient Name by Community. The report output may be stored in a search template to be used for additional data retrievals.

\* **Note:** Inactive, Transient, Unreviewed, Deceased, and Non-IHS patients are included when the Master List is sorted by Status. If you choose to sort patients by Status, you may list patients for one or more of the status categories. This is the only report in Case Management, other than Individual Case Summary and General Retrieval, that displays patients who are not classified as Active.

## Patient and Statistical Reports

This report option produces patient lists or counts. It includes reports for the following six categories as well as for any additional data items you have added to your register.

- Register Data
- Case History
- Case Review Date
- Complications
- Diagnoses
- Family Members

Most reports can be sorted by Patient Name, Community, Facility where Followed, Age, Sex, or a combination of these factors. Additionally, you can be very selective in specifying which patients to retrieve. For example, you can select to retrieve only patients with a specific diagnosis or complication and then sort the list by any of the factors above. By indicating the patients you want to retrieve and the sorting variables, you can generate a very specific report; for instance, all patients with major amputations who live in Santa Fe and are between the ages of 40 and 50.

When you request these reports, you will be asked whether you want a Patient or Statistical report. By responding with P, for patient, the system will generate a patient listing. A response of S, for statistical, will result in a display of counts without a patient listing.

You will also be asked whether you want to store the output from the report in a search template. If you respond YES, you will be asked to enter a name for the template. The name may be up to 30 characters long. After naming the template, the report will be generated and the patients will be stored in a template for use in Q-Man retrievals, as specified in the following section (pages 21 to 22).

## Register Patient General Retrieval (Lister)

This report produces a list of patients on a selected register by the criteria that you choose. The report format is extremely flexible because you are able to specify the selection criteria, the data items to be printed, and the sorting order. You may print a detailed patient list or just counts of those patients that match the criteria you have selected. The first page of the report output is a summary page that displays the selection criteria, print items, and sort variable that you have requested.

After selecting the report option, you may enter the name of a previously defined report or press RETURN to bypass the first prompt. Then, in three separate steps, you will be asked to identify your selection criteria, data items to print for each patient, and the sorting order. All of the selections are listed below. You may save the selected variables for future use by entering YES when prompted to save them and then naming the report template.

If you design a report that is 80 characters or fewer in width, it can be displayed on the screen or printed. If your report is 81 to 132 characters wide, it must be printed on a printer capable of producing 132 character lines or a printer set up for condensed print.

### Selection Criteria

- |                          |                          |                        |
|--------------------------|--------------------------|------------------------|
| 1) Patient Name          | 14) Medicaid Eligibility | 27) Case History       |
| 2) Patient Sex           | 15) Priv Ins Eligibility | 28) Interventions      |
| 3) Patient Date of Birth | 16) PCC Designated Prov  | 29) Care Plan          |
| 4) Patient Age           | 17) Register Status      | 30) Care-Plan Comment  |
| 5) Patient Date of Death | 18) Case Priority        | 31) Complications      |
| 6) Living Patients       | 19) Case Manager         | 32) Complication Comm. |
| 7) Chart Facility        | 20) PHN                  | 33) Diagnoses          |
| 8) Patient Community     | 21) Last Review Date     | 34) Date of Onset      |
| 9) Patient Tribe         | 22) Next Review Date     | 35) Etiology           |
| 10) Eligibility Status   | 23) Where PT Followed    | 36) Risk Factors       |
| 11) Class/Beneficiary    | 24) Date Last Edited     | 37) Medications        |
| 12) Cause of Death       | 25) Case Comments        | 38) Services           |
| 13) Medicare Eligibility | 26) Primary Provider     |                        |

**Print Items**

- |                        |                          |                        |
|------------------------|--------------------------|------------------------|
| 1) Patient Name        | 16) Cause of Death       | 31) Client Contact     |
| 2) Patient Chart #     | 17) Medicare Eligibility | 32) Primary Provider   |
| 3) Patient Sex         | 18) Medicaid Eligibility | 33) Case History       |
| 4) Patient SSN         | 19) Pvt Ins Eligibility  | 34) Interventions      |
| 5) Patient DOB         | 20) Patient's Last Visit | 35) Care Plan          |
| 6) Patient Age         | 21) PCC Designated Prov  | 36) Care-Plan Comment  |
| 7) Patient DOD         | 22) Register Status      | 37) Complications      |
| 8) Mlg Address-Street  | 23) Case Priority        | 38) Complication Comm. |
| 9) Mlg Address-City    | 24) Case Manager         | 39) Diagnoses          |
| 10) Home Phone         | 25) PHN                  | 40) Date of Onset      |
| 11) Mother's Name      | 26) Last Review Date     | 41) Etiology           |
| 12) Patient Community  | 27) Next Review Date     | 42) Family Members     |
| 13) Patient Tribe      | 28) Where PT Followed    | 43) Risk Factors       |
| 14) Eligibility Status | 29) Date Last Edited     | 44) Medications        |
| 15) Class/Beneficiary  | 30) Case Comments        | 45) Services           |

**Sort Criteria**

- |                      |                          |                       |
|----------------------|--------------------------|-----------------------|
| 1) Patient Name      | 8) Classification/Benefi | 15) Next Review Date  |
| 2) Patient Age       | 9) Eligibility Status    | 16) Date Last Edited  |
| 3) Patient Community | 10) Cause of Death       | 17) Case Priority     |
| 4) Patient Sex       | 11) Patient DOB          | 18) Case Manager      |
| 5) Patient Tribe     | 12) Patient DOD          | 19) PHN               |
| 6) Patient Chart #   | 13) Register Status      | 20) Where PT Followed |
| 7) PCC Desig Prov    | 14) Last Review Date     | 21) Primary Provider  |

**Note:** The numbers of the Select, Sort, and Print items will correspond to the actual data item structure of the diabetes register that you have created. The data items will be limited to those you have included in your register and those available from the PCC database.

For more information about using this report option, please refer to the Case Management (version 2.0) user's manual.

**Display Data for a Patient's Last Visit**

This option displays all visit-related data for a specific patient's visit. To generate this report, you will enter the patient's name. If you do not have the patient's name, type a question mark at the prompt for information on alternate ways to identify the patient. The visit file displays first, followed by all visit-related data files that correspond with the visit selected; for example, Providers, POVs, and Measurements.

## Generating Recall Letters from The Case Management System

You may generate recall letters from the Case Management System for patients in your Diabetes Register. The patient information that appears on each recall letter (Referral, Provider, Purpose, Next Appointment Date, Contact Person, and Contact Telephone Number) comes only from the data that has been entered for each patient's recall date. These letters may be customized to meet your specific needs.

Begin by choosing Manage Recall Letters from the Case Management main menu. To customize your letter, choose Setup/Modify Letter Format Structure from the Recall Letter Management menu and enter the name of your register. Then modify the letter format by entering top and left margin positions, a signature block, and heading information at the appropriate prompts. You may also add additional information to the standard letter by entering text into the word-processing field.

After you have customized your letter, you will need to select those patients to whom you will be sending the letters. From the Manage Recall Letters menu, select Print Specified Recall Letter(s). Then select patients by one or more of the following data items:

- Appointment Status
- Case Manager
- Next Appointment Date
- Patient
- Public Health Nurse
- Recall Dates

Before the letters are printed, you may view a sample letter and modify it, if needed. A sample letter is shown on the following page.

For more information on recall letters, refer to the Case Management System (version 2.0) user's manual.

MAY 7,1996

SELLS HOSPITAL  
SELLS, ARIZONA

Dear Client:

Review of our records indicate BECKY THATCHER (Chart #: 256498)  
is scheduled for the following appointment with:

REFERRAL: IHS  
PROVIDER: DR. DONALD JOHNSON  
PURPOSE: ANNUAL PHYSICAL  
APPT DATE: 06/15/96

To arrange an appointment date/time, please contact:

CONTACT: MARY JONES  
PHONE: 555-4598

ADDITIONAL CUSTOMIZED DATA MAY BE ENTERED IN THE WORD-PROCESSING FIELD  
USING THE SETUP/MODIFY LETTER FORMAT STRUCTURE OPTION. THE TEXT YOU  
ENTER WILL BE PRINTED HERE.

# Retrieval of Clinical Data from the PCC for Patients in the IHS Diabetes Register

Q-Man, the PCC query tool, provides virtually unlimited access to PCC clinical data for patients contained in your IHS Diabetes Register. To utilize Q-Man for retrieving data from your Diabetes Register, you must first generate a list of the patients for whom you are interested in retrieving clinical data. This list of patients is referred to as a cohort or search template. (Throughout this document, the terms cohort and search template are used interchangeably.)

You will use the Master List or Patient and Statistical Reports option to create cohorts. Both of these options are accessed from the Report Generation menu in the Case Management System. Using these Case Management options, you can generate a cohort of all patients in your register, all active patients, patients in selected age groups or communities, patients with selected diagnoses or complications, or patients in other categories of interest to you. The process for generating these cohorts is described on pages 15 to 18.

Formal Q-Man training for Diabetes Coordinators is essential to maximize use of the link between the Diabetes Register and the PCC. Instructions on using Q-Man will not be provided in this manual. Instead, the remainder of this section shows two specific examples of patient cohorts for the IHS Diabetes Register and provides Q-Man dialogue for producing three Q-Man outputs. These outputs are representative of the many Q-Man searches of PCC clinical data that are available to you.

## Cohort Generation Examples

### Example 1: All Active Patients

To generate a cohort of all active patients, use the Master List option on the Report Generation menu of the Case Management System. Select to sort by Patient and respond YES when asked if you want to create a search template. Enter a name for your template, such as ACTIVE PTS FROM DM REG. Remember that a cohort of all active patients will include IGT and Gestational Diabetes patients as well as IDDM and NIDDM patients. This template can now be used as a cohort in Q-Man.

### Example 2: NIDDM Patients Age 65 and Older

To generate a cohort of a specific subset of your Diabetes Register patients, use the Patient and Statistical Reports option on the Report Generation menu. In this example, a cohort of NIDDM patients age 65 and older will be created.

In Patient and Statistical Reports, select the Diagnoses report option. At the sort prompt, select Diagnoses as your primary sort parameter. Respond YES when asked if you wish to sort by a particular diagnosis. At the prompt for Diagnosis,

enter NIDDM. When asked if you want to sort by another parameter, respond YES.

When prompted for your next sort parameter, select Patient Age. When asked if you want to sort by a particular age range, respond YES. Enter 65 for the start of the age range. At the upper limit prompt, press RETURN to include all ages over 65.

When asked if you want to sort by another parameter, respond NO. You will be asked whether you want a Patient or Statistical report. Enter P for Patient. Finally, you will be asked if you want to store your report output as a search template. Respond YES and name the template NIDDM PTS 65 AND OVER.

### **Q-Man Search Examples**

In this example, the NIDDM PTS 65 AND OVER cohort created above will be used to:

- display each patient's last PPD reading
- identify patients who have not had a flu shot in the past year
- identify patients who have not been seen in the dental clinic in the past year

To obtain these PCC data items, select the Search mode in Q-Man. Begin by identifying your search subject as LIVING PATIENTS. When you are prompted for an Attribute of the patients, enter the left bracket symbol followed by the name of your cohort: [NIDDM PTS 65 AND OVER. You will then be given four options related to your cohort. Select option 1 to indicate that the patients to be searched must be members of your cohort.

The preceding steps for identifying your cohort to Q-Man are common to all three of these search examples. After you have identified the cohort and limited your search to only those patients in the cohort, you will be prompted for a Q-Man Attribute. The following Q-Man dialogues will produce the results of the three desired searches outlined previously. User responses and instructions are in bold type.

### **Last PPD Reading**

```
Attribute:  PPD
First Condition/Attribute of PPD READING:  LAST
Enter the Value Which Goes With Last (e.g., Last 1, Last 2.)
Value:  1
Next Condition/Attribute of PPD READING:  (Press RETURN to
bypass.)
Next Attribute:  (Press RETURN to bypass.)
```

```
* * Q-Man Output Options * *
Select one of the following:
  1 DISPLAY results on the screen
  2 PRINT results on paper
  3 COUNT 'hits'
  4 STORE results of a search in a FM search template
  5 SAVE search logic for future use
```

```

6 R-MAN special report generator
9 HELP
0 EXIT
Your Choice:  DISPLAY// 1
You have 2 options for listing PPD READINGS:
1) For each patient, list all PPD READINGS
2) List all patients with PPD READINGS
Your Choice (1 or 2):  1// 1

```

Q-Man will now display the last PPD Reading for each patient in your cohort.

### No Flu Shot in the Past Year

```

Attribute:  FLU
First Condition/Attribute of INFLUENZA VACCINE:  SINCE
Exact Date:  T-365 (or the date one year ago)
Next Condition/Attribute of INFLUENZA VACCINE:  NULL (meaning
the patient has not had the shot in the past year)
Next Condition/Attribute of INFLUENZA VACCINE:  (RETURN)
Next Attribute:  (RETURN)
* * Q-Man Output Options * *
Select one of the following:
1 DISPLAY results on the screen
2 PRINT results on paper
3 COUNT 'hits'
4 STORE results of a search in a FM search template
5 SAVE search logic for future use
6 R-MAN special report generator
9 HELP
0 EXIT
Your Choice:  DISPLAY// 1

```

Q-Man will now display those patients in your cohort who have not received a flu shot in the past year.

### No Dental Clinic Visit in the Past Year

```

Attribute:  VISIT
First Condition/Attribute of VISIT:  SINCE
Exact Date:  T-365 (or the date one year ago)
Next Condition/Attribute of VISIT:  CLINIC
Enter Clinic:  DENTAL
Enter Clinic:  (RETURN)
Next Condition/Attribute of VISIT:  NULL (meaning the patient
has not had a dental clinic visit in the past year)
Next Condition/Attribute of VISIT:  (RETURN)
Next Attribute:  (RETURN)
* * Q-Man Output Options * *
Select one of the following:
1 DISPLAY results on the screen
2 PRINT results on paper
3 COUNT 'hits'
4 STORE results of a search in a FM search template
[ETC.]
Your Choice:  DISPLAY// 1

```

Q-Man will now display those patients in your cohort who have not visited the dental clinic in the past year.

### **Special Q-Man Outputs**

In addition to providing lists of your search results, Q-Man can also produce age-group reports, mailing labels, health summaries, or ASCII output to use on a personal computer for statistical analysis or graphics displays. To use these features, select option 6, R-Man Special Report Generator, when presented with Q-Man Output Options.

# Diabetes Program Audit for Quality Assurance and Quality Improvement

The Diabetes Program QA Audit in the PCC Management Reports module consists of options that facilitate the set-up and running of the official IHS Diabetes Quality Assurance Audit Report. This section of the Diabetes Management System manual contains instructions for running the report, definitions and criteria for each audit item, instructions for initial set-up, a sample report, and directions for generating a patient cohort for use in the audit process.

```
*****
**      PCC Management Reports      **
**      Diabetes Audit Report Menu  **
*****

Version 3.0

SELLS HOSPITAL/CLINIC

DM      DM Audit Report
MED     Create Medication Taxonomies (INSUL,ORAL,ACEI)
CHOL    Add/Edit CHOLESTEROL Lab Test Taxonomy
CREA    Add/Edit CREATININE Lab Test Taxonomy
GLUC    Add/Edit GLUCOSE Tests Lab Test Taxonomy
HGB     Add/Edit HGB A1C Lab Test Taxonomy
PAP     Add/Edit PAP SMEAR Lab Test Taxonomy
TRIG    Add/Edit TRIGLYCERIDE Lab Test Taxonomy
UPRO    Add/Edit URINE PROTEIN Lab Test Taxonomy
URIN    Add/Edit Urinalysis Lab Test Taxonomy
```

## The Diabetes Program QA Audit Report

To run this report, select the DM Audit Report option on the Diabetes Audit menu. You will then be prompted to enter the name of your facility's official diabetes register. If you have installed the IHS Diabetes Register, enter IHS DIABETES. If you do not have a Case Management-based diabetes register, bypass this prompt by pressing RETURN. You must then enter either the fiscal year or a range of visit dates for which you would like patient information.

Next, you will be prompted to identify the patients to audit. You may enter individual patients by name or chart number, the name of a cohort of patients created with Q-Man or Case Management, or the names of multiple cohorts of

patients. The name of a cohort must always be preceded by the left bracket symbol ( [ ) so that the system will recognize that you are entering the name of a search template. Instructions for generating an audit cohort follow the sample reports at the end of this section.

You can obtain three types of audit reports: (1) a printed report for each individual patient, (2) a printed cumulative report that summarizes the results for all patients, or (3) a data file readable by the Epi Info software program. You must specify which type of report you want to generate from the list provided on the screen.

When generating these reports, keep in mind that certain patient clinical data, for example, lab results and EKG data, may not be currently available from the PCC at your site. Since this report is generated from the PCC database, if the clinical information needed for generating this report was not entered into the PCC, the report will not recognize that the clinical event occurred. Space is provided on both the individual and cumulative printed reports for the DM auditor to manually enter that data directly from the patient record. Additional data may be added to the Epi file using the Epi Info software, as described below.

To generate printed reports, you may choose the individual report, cumulative report, or both. Each patient's individual report will take at least 10 seconds to run. When running the Audit Report for a large number of patients, the report should be queued to a printer to generate after regular hours.

To create a data file for use by Epi Info, select the Create Epi Info File option. Once created, the data file can be downloaded to a diskette and used elsewhere. The file produced will have the extension .REC and can be read by Epi Info, the software used by the IHS Diabetes Program for their annual diabetes chart audit.

The validity of the Epi file you create will depend largely on the accuracy and completeness of the data that has been entered into the PCC. Since some audit elements may not be collected through the PCC at your facility, it is likely that the file will require editing or additional data entry before it can be forwarded to the Diabetes Program. When making additions or modifications to the data file, you may find it helpful to print out individual audit reports on the same cohort of patients that you named to create the Epi file. The individual audit reports will be printed in the same order that they appear in the data file. You may use the individual printed reports for recording additional data from chart reviews. Once you have obtained the necessary additional data, these data can be added to the Epi file in the appropriate places using the Enter Data option of the Epi Info software. For further instructions regarding the Epi Info DM audit program, consult your Diabetes Control Officer.

## Definitions and Criteria for Audit Items

The following definitions are used by the computer software for each item retrieved on the Audit Report.

### Demographic Data

**Area.** The IHS area of the facility for which the report was run.

**Service Unit.** The service unit of the facility for which the report was run.

**Facility/Location.** The facility/location for which the report was run.

**Chart Number.** The patient's chart number at the facility for which the report was run.

**Audit Date.** The date the report was generated.

**Report Dates.** The date range specified by the user.

**Report Generated By.** The name of the person who ran the report.

**Date of Birth.** The patient's date of birth.

**Sex.** The patient's sex.

**Age.** The patient's age on the ending date of the audit date range.

### Clinical Data

**Tobacco Use.** Tobacco-use information is retrieved from the Health Status file, the PCC Problem List, or the Purpose of Visit file. The system first retrieves the current entry of any of the following in the Health Factors file.

- Current Smokeless Tobacco User
- Current Smoker
- Non-Tobacco User
- Previous Smokeless Tobacco User
- Previous Smoker

If tobacco use is not documented in the Health Factors file, the system then scans the PCC Problem List for a diagnosis of Tobacco Use (305.1-305.13). If no Problem List entry is found, then the system will scan all Purposes of Visit (POVs) during the audit time frame for a diagnosis of tobacco use (305.1-305.13). The items that are found will be printed. If a Problem or POV is found, the provider narrative is also printed. If no evidence of tobacco use is found, the message UNDOCUMENTED will be printed.

**Date of Onset from the Diabetes Register or PCC Problem List.** The system will determine the date of onset of diabetes in the following manner:

1. The system will check the official Diabetes Register. If the patient exists in the register, the date of onset from the diabetes diagnosis field will be printed.
2. The system will then scan the Problem List for a problem diagnosis of 250.00-250.93. If a diagnosis is found and the date of onset has been recorded, this date will be printed.
3. If no date is found, the message DATE OF ONSET NOT RECORDED will be printed.

**Date of Earliest Diabetes Diagnosis from PCC.** The system utilizes the ICD9 diagnoses codes 250.00-250.93 to determine the earliest Purpose of Visit for diabetes that has been documented within the PCC Purpose of Visit file. Note that this date may not be the same as the date of onset.

**Height.** The last height on record is printed. Note that this height may have been taken after the audit period ending date.

**Weight.** The last weight recorded for a non-prenatal visit is printed.

**BMI.** The body mass index, a commonly used index of obesity in populations, is calculated from the patient's height and weight data and printed in the report. The value is a ratio of patient's weight in kilograms to patient's height in meters<sup>2</sup>.

**Weight, Blood Pressure, and Blood Sugar Recorded 75% of Visits.** The system searches all visits in the audit date range for a Purposes of Visit of diabetes. The percentage of diabetic-related visits during which these measurements or tests were performed is printed. All pharmacy clinic visits are ignored.

**Last 3 Blood Pressures and Last 3 Blood Sugars.** The last 3 blood pressures and last 3 blood sugars recorded during the audit date range will be printed, if available. Blood pressures or blood sugars taken in the emergency room will not be included in the display. The lab tests audited when determining whether a blood sugar was done are those indicated by the user during the initial setup procedures described on pages 30 to 34.

**HTN Documented.** The system first checks to see if hypertension (ICD code range 401.0-405.99) is present on the PCC Problem List. If not, the system then checks to see if the patient had a Purpose of Visit of hypertension (ICD code range 401.0-405.99) in the 5 years prior to the end of the indicated audit date range.

**Last Hgb A1c/GHb.** The system locates the last instance of this test during the audit date range.

## **Examinations**

**Diabetic Foot Exam, Complete.** Indicates whether the patient had a diabetic foot exam recorded during the audit date range.

**Diabetic Eye Exam.** Indicates whether the patient had a diabetic eye exam recorded during the audit date range.

**Rectal Exam.** Audited only for patients over 40 years old. Indicates whether the patient had a rectal exam during the audit date range.

**Pap Smear.** Females only. Indicates whether the patient had a pap smear during the audit date range.

**Breast Exam.** Females only. Indicates whether the patient had a breast exam during the audit date range.

**Mammography.** Females only. Indicates if the patient ever had a mammogram.

The date of the last mammogram is reported and its accordance with the following ACS guidelines is noted:

- Ages 40-49: mammogram within the past 24 months
- Ages 50 and up: mammogram within the past 12 months

### **Education**

The current PCC list of Diabetes Education Topics includes the following items:

- DM-C Complications
- DM-N Nutrition
- DM-EX Exercise
- DM-GI General Information

The previous list of Diabetes Education Topics that was in effect prior to October 1993 is no longer recommended for use, although the audit program continues to accept them.

**Complications.** Indicates instruction on diabetes-related complications was given during the audit date range.

**Nutrition.** Indicates diabetes nutrition instruction was provided during the audit date range. Also indicates if the provider who performed the instruction was a registered dietitian, another kind of provider, or both.

**Exercise.** Indicates the patient received diabetes-related exercise instruction during the audit date range.

**General Information.** Indicates whether the patient received any diabetes education on topics other than complications, nutrition, or exercise during the audit date range.

### **Therapy**

The report indicates whether the patient received insulin, an oral hypoglycemic, or both during the 4 months prior to the end of the audit time frame. If there is no evidence of drugs prescribed, then the system will display DIET ALONE. The medicines audited when determining type of therapy are those specified during the initial setup procedures described on pages 30 to 34.

**Ace Inhibitor Use.** The report indicates whether the patient received an ace inhibitor during the 4 months prior to the end of the audit time frame. If not, the report displays the message DOES NOT CURRENTLY USE/UNDETERMINED. The medicines audited when determining ace inhibitor use are those specified during the initial setup procedures described on pages 30 to 34.

## Other Data

**Flu Vaccine.** Indicates whether influenza vaccine was given during the audit date range.

**Pneumovax.** Indicates if pneumococcal vaccine was ever given.

**Td.** Indicates whether a Td was given during the 10 years prior to the audit.

**TB Treatment Status.** This information is retrieved from the Health Factors file. The TB Status health factors are:

- TB - Tx Complete
- TB - Tx Incomplete
- TB - Tx Unknown
- TB - Tx Untreated

**PPD.** Displays date of last PPD and result.

**PPD Status Code.** A patient's PPD status will be indicated by one or more of the following messages:

- PPD + Treatment Complete (based on health factor)
- PPD + Not Treated or Unknown Treatment
- PPD – Up-to-Date (placed in or after DX)
- PPD – Placed Before Date of DX
- PPD – Date of DX Unknown
- PPD Status Unknown

## Laboratory Data

**EKG.** EKG data is not yet available through the PCC. The reviewer must perform a chart review to determine if an EKG was ever performed.

**Urinalysis.** Indicates the patient had a urinalysis during the audit date range.

**Proteinuria.** Indicates that the last urine protein during the audit date range was 1+ or greater.

**Microalbuminuria.** For those without evidence of preteinuria, indicates whether a test for microalbuminuria was positive, negative, or not performed.

**Creatinine.** Indicates the result of the last creatinine during the audit date range. If the patient has a Purpose of Visit code that indicates dialysis during the date range, the message ON DIALYSIS is printed.

**Cholesterol.** Displays the last cholesterol level during the audit date range.

**Triglycerides.** Displays the last triglyceride level during the audit date range.

## Initial Setup Instructions

In order to use the DM Audit Report, you must first set up three drug groupings called *taxonomies*. These taxonomies are created using the option called Create Medication Taxonomies, which is found on the Diabetes Audit main menu.

You must create the following three drug taxonomies using the medication taxonomy creation options:

- DM Audit Insulin Drugs
- DM Audit Oral Hypoglycemics
- DM Audit Ace Inhibitor

The creation of these taxonomies is required at the facility level because of variations in terminology and spellings in local RPMS drug tables. Step-by-step instructions for creating these drug taxonomies are provided on the following page.

If your facility enters lab tests into the PCC database and you want to include these results on the DM Audit, you must create lab test taxonomies during the initial set-up process. The lab test taxonomies include the following classifications:

- |               |                 |
|---------------|-----------------|
| • Cholesterol | • Pap Smear     |
| • Creatinine  | • Triglyceride  |
| • Glucose     | • Urine Protein |
| • HBG A1C     | • Urinalysis    |

Similar to the drug taxonomies you will create, lab test taxonomies are required because of differences in terminology and tests used at various sites. In this section of the manual, a detailed example is provided for creating a taxonomy of glucose tests. All other lab test taxonomies are created in the exact same way by adding the specific tests to each group. The menu options for creating each of the lab test taxonomies are included on the Diabetes Audit Report menu.

## DM Audit Insulin Drugs

From the main DM Audit menu, enter MED to Create Medication Taxonomies. At the Enter RX prompt you must enter the insulin drugs, as shown below. You may type INSUL to see a list of the insulin options. Then enter the number of the selection you would like to add. You can obtain a list of the appropriate drugs to include from the pharmacist.

```

Enter RX:  INSUL
  1  INSULIN LENTE U-100 (PORK)
  2  INSULIN NPH U-100 (PORK)
  3  INSULIN NPH U-100 (HUMAN)
  4...  ETC.
CHOOSE 1-N:  1
(NOTE:  If you are asked whether you want all drugs in this
class, respond NO.)
Enter ANOTHER RX:  INSUL
  1  INSULIN LENTE U-100 (PORK)
  2  INSULIN NPH U-100 (PORK)
  3  INSULIN NPH U-100 (HUMAN)
  4...  ETC.
CHOOSE 1-N:  2

```

Continue selecting drugs one at a time until you have selected all of the insulin RX entries in the drug file. When you have finished selecting the drugs, press RETURN at the next Enter RX prompt. To complete this taxonomy creation, enter the responses indicated at the appropriate prompts:

```
Want to save this RX group for future use? NO// Y (YES)
Group name: DM AUDIT INSULIN DRUGS
ARE YOU ADDING 'DM AUDIT INSULIN DRUGS' AS A NEW TAXONOMY
(THE 27TH)? YES
TAXONOMY BRIEF DESCRIPTION: INSULIN DRUGS USED IN DM AUDIT
EXTENDED DESCRIPTION: 1> (Enter RETURN to bypass.)
```

### DM Audit Oral Hypoglycemics

From the main DM Audit menu, enter MED to Create Medication Taxonomies. At the Enter RX prompt, you must enter the oral hypoglycemic drugs. You can obtain a list of the appropriate drugs from the pharmacist.

```
Enter RX: CHLORPROPAMIDE 250MG TAB
Enter ANOTHER RX: GLIPIZIDE 5MG TAB
Enter ANOTHER RX: TOLAZAMIDE 250MG TAB
```

Continue selecting drugs until you have selected all the oral hypoglycemic RX entries in the drug file. When you have finished your selections, press RETURN at the next Enter RX prompt. To complete this taxonomy creation, enter the responses indicated below at the appropriate prompts:

```
Want to save this RX group for future use? NO// Y (YES)
Group name: DM AUDIT ORAL HYPOGLYCEMICS
ARE YOU ADDING 'DM AUDIT ORAL HYPOGLYCEMICS' AS A NEW TAXONOMY
(THE 27TH)? Y (YES)
TAXONOMY BRIEF DESCRIPTION: ORAL HYPOGLYCEMICS RXS
EXTENDED DESCRIPTION: 1> (Enter RETURN to bypass.)
```

### DM Audit Ace Inhibitors

From the main DM Audit menu, enter MED to Create Medication Taxonomies. At the Enter RX prompt, you must enter the ace inhibitor drugs. You can obtain a list of the appropriate drugs from the pharmacist.

```
Enter RX: CAPTOPRIL 25MG TAB
Enter ANOTHER RX: CAPTOPRIL 50MG TAB
```

Continue selecting drugs until you have selected all the ace inhibitor RX entries in the drug file. When you have finished your selections, press RETURN at the next Enter RX prompt. To complete this taxonomy creation, enter the responses indicated below at the appropriate prompts:

```
Want to save this RX group for future use? NO// Y (YES)
Group name: DM AUDIT ACE INHIBITORS
ARE YOU ADDING 'DM AUDIT ACE INHIBITORS' AS A NEW TAXONOMY (THE
27TH)? Y (YES)
TAXONOMY BRIEF DESCRIPTION: ACE INHIBITOR RXS
EXTENDED DESCRIPTION: 1> (Enter RETURN to bypass.)
```

You have now established the three drug taxonomies. If your facility enters lab test results into the PCC, proceed to the next section for instructions on creating a lab test taxonomy. If your facility does not enter lab test results into the PCC, this concludes the set-up requirements for the DM Audit program.

### **DM Audit Glucose Lab Tests**

Because the names of lab tests may differ across facilities, it is necessary to create lists of test names specific to your facility that represent your monitoring tests. Creating groups of lab tests is a little different than creating the drug taxonomies. An example of creating the glucose tests taxonomy is presented in this section to use as a guide. Remember that the steps for creating all of the lab test taxonomies are the same. Only the menu options you select and the lab test names you enter will differ for each taxonomy.

To build the list of lab tests for indicating whether a blood sugar test was performed, select the option Add/Edit Glucose Tests Lab Test Taxonomy on the Diabetes Audit menu. This option is used to enter the lab tests that will be audited to determine whether or not a patient had blood sugar tests performed on at least 75% of the diabetes visits. You will be asked to enter the lab test name, the site/specimen for the test, and whether it is a fasting or random glucose test. It is recommended that you have one of the laboratory personnel assist you when entering this data.

Examples of tests that might be included in your Blood Sugar group are identified below. As an example, detailed instructions are provided for entering the glucose test into your taxonomy.

Lab test:	Glucose	Lab Test:	Glucometer
Site/Specimen:	Serum	Site/Specimen:	Blood
	Blood	Fasting/Random:	Random
	Plasma		
Fasting/Random:	Random		
Lab test:	Fasting glucose		
Site/Specimen:	Serum		
	Blood		
	Plasma		
Fasting/Random:	Fasting		

If you are using the glucometer test in the clinic area, it will be necessary to provide the results to laboratory personnel for entry of this information into the computer.

## Sample Session for Adding Glucose to the Blood Sugar Group

Enter GLUC on the Diabetes Audit Menu to select Add/Update DM Audit Glucose Tests.

Select DM AUDIT LABORATORY TESTS: **GLUCOSE**

- 1 GLUCOSE
- 2 GLUCOSE FASTING GLUCOSE
- 3 GLUCOSE GLUCOSE,FLUID
- 4 GLUCOSE 2HR PP GLUCOSE

CHOOSE 1-4: **1**

ARE YOU ADDING 'GLUCOSE' AS A NEW DM AUDIT LABORATORY TEST  
(THE 1ST FOR THIS PCC MAN REPORTS CONTROL FILE)? **Y** (YES)

DM AUDIT LABORATORY TESTS RANDOM OR FASTING: **RANDOM**  
RANDOM OR FASTING: RANDOM// (**Enter RETURN to accept default  
value.**)

Select SITE/SPECIMEN: **SERUM** 0X500

ARE YOU ADDING 'SERUM' AS A NEW SITE/SPECIMEN (THE 1ST FOR  
THIS DM AUDIT LABORATORY TEST)? **Y** (YES)

Select SITE/SPECIMEN: **PLASMA**

- 1 PLASMA 0X400
- 2 PLASMA CELL 05320
- 3 PLASMABLAST 05310
- 4 PLASMACYTIC TISSUE 05300

CHOOSE 1-4: **1**

ARE YOU ADDING 'PLASMA' AS A NEW SITE/SPECIMEN (THE 2ND FOR  
THIS DM AUDIT LABORATORY TESTS)? **Y** (YES)

Select SITE/SPECIMEN: **BLOOD**

- 1 BLOOD 0X000
- 2 BLOOD BAND CELL 0X161
- 3 BLOOD BASOPHIL 0X180
- 4 BLOOD EOSINOPHIL 0X170
- 5 BLOOD ERYTHROCYTE 0X120
- 6 BLOOD GRANULOCYTIC CELL 0X150

CHOOSE 1-6: **1**

ARE YOU ADDING 'BLOOD' AS A NEW SITE/SPECIMEN (THE 3RD FOR  
THIS DM AUDIT LABORATORY TEST)? **Y** (YES)

Select SITE/SPECIMEN: (**Enter RETURN for prompt to add another  
test.**)

Select DM AUDIT LABORATORY TESTS: (**Enter another test name and  
repeat the above procedure. If there are no further tests to be  
added, enter RETURN at this prompt.**)

**Warning:** When your facility installs the RPMS Laboratory System, you will need to repeat the above procedure to rebuild this list of lab tests.

## Sample Audit Reports

The following three pages contain sample audit reports. An individual report is presented first, followed by a cumulative report.



IHS DIABETES QA AUDIT FOR Fiscal Year 1995  
CUMULATIVE REPORT

Total Number of Patients Audited: 175

DATE: APR 30, 1996  
SERVICE UNIT: SELLS  
FACILITY: SELLS HOSPITAL/CLINIC

REVIEWER: JOHNSON, MARY  
AREA: TUCSON

	Percent Compliance
BASELINE DATA	
Female	68%
Age	
<15 yrs	0%
15-44 yrs	18%
45-64 yrs	51%
65 yrs and older	31%
Diabetes Treatment - diet	58%
insulin	21%
oral	12%
both	9%
ACE INHIBITOR - currently uses	12%
- does not currently use	
or undetermined	88%
Flowsheet current	72%
Tobacco	
Tobacco used	32%
Tobacco not used	52%
Tobacco used in past	4%
Tobacco use not documented	12%
Duration of Diabetes	
Less than 10 years	26%
10 years or more	63%
Date of Onset not recorded	11%
Overwt/Obese	
*(height may be old)	
Overweight (BMI >27.7 or >27.2)	66%
Obese (BMI >31.0 or >32.2)	39%
BMI could not be calculated	14%
Height recorded	86%
PERFORMED AT LEAST 75% OF VISITS	
Weight	76%
Blood Pressure	94%
Normotensive	42%
Controlled HTN	23%
Uncontrolled BP	24%
Severe HTN	3%
Undocumented HTN control	8%
Blood Sugar	83%
Control Level acceptable	56%
Control Level fair	14%
Control Level Poor	21%
Control Level Very Poor	5%
Control Level Undocumented	4%

IHS DIABETES QA AUDIT FOR Fiscal Year 1995

Page 2

Facility: SELLS HOSPITAL/CLINIC

## Percent Compliance

EXAMS - Yearly	
Diabetic Foot Exam, Complete	67%
Diabetic Eye Exam	62%
Dental Exam	48%
Rectal Exam (>40 yrs)	31%
PAP smear	89%
Breast exam	92%
Mammogram ever	54%
Mammogram per ACS guidelines	50%
DIABETES RELATED EDUCATION - Yearly	
Any Diet Instruction	64%
Exercise Instruction	60%
Any Diabetes Education	76%
IMMUNIZATIONS	
Flu Vaccine - yearly	21%
Pneumovax - once	67%
Tetanus/Diphtheria (q 10 yrs)	46%
LABORATORY EXAMS	
EKG - Once	43%
Urinalysis - yearly	78%
Proteinuria	54%
Creatinine - yearly	66%
Creatinine > 2.0	44%
Cholesterol - yearly	78%
Cholesterol > 240 mg/dl	51%
Triglyceride - yearly	65%
PPD STATUS	
PPD +, Treatment Complete	21%
PPD +, Not treated or unknown treatment	7%
PPD -, Up-to-date (ie, placed on or after diagnosis date)	15%
PPD -, before DM diagnosis	18%
PPD -, date of DM diagnosis unknown	25%
PPD status unknown	14%
TB STATUS (HEALTH FACTOR)	
TB - TX COMPLETE	13%
TB - TX INCOMPLETE	33%
TB - TX UNKNOWN	77%
TB - TX UNTREATED	66%
TB - Health Factor not recorded	5%

Local item:

## **Generation of a Patient Cohort For Use in the Audit Report**

The Diabetes Program QA Audit can be performed for a list of individual patients (identified by name or chart number) or for a template or cohort of patients that you have saved from a previous retrieval. Three methods for generating and saving a cohort of patients for use in the Audit Report are described below.

### **Using All IDDM and NIDDM Patients as Your Audit Cohort**

Since the automated audit process takes less than a minute per patient, you may wish to audit all active IDDM and NIDDM patients in your Diabetes Register. You may do so from the Case Management System where your Diabetes Register data resides. Select the Report Generation menu option from the Case Management System main menu. Next, enter the name of your Diabetes Register (e.g., IHS DIABETES). Then select the Patient and Statistical Reports menu option.

In the Patient and Statistical Reports menu, select the Diagnostic Criteria report. It will be necessary to run this report twice—once to generate a cohort of IDDM patients and a second time to generate a cohort of NIDDM patients. Select Diagnostic Criteria from the sorting options. You will be asked if you want to sort by a particular diagnostic criteria. Respond YES. When prompted for a specific diagnosis, enter IDDM. You will then be asked if you want to sort by another attribute. Respond NO. When prompted for a patient or statistical report, enter P for patient.

When asked if you want to Store Report Result as a Search Template, respond YES. You will then see Search Template, which prompts you to enter a name for your template. Enter DM REG IDDM PTS as the cohort name. The computer then asks if you are adding DM REG IDDM PTS as a new sort template. Respond YES.

At the prompt for Device, you may enter HOME or you may queue the report to run at a later time by typing Q. Either way, the system will select and store in your template all active IDDM patients from your register.

You must now run the report a second time—this time to select active NIDDM patients and store them in a different template named DM REG NIDDM PTS. Follow the same procedure outlined above, but enter NIDDM for the diagnosis and assign the new name to the template.

After you have run the second report, exit Case Management and select the Diabetes Program QA Audit option in PCC Management Reports. You may proceed to run the QA Program Audit as instructed on pages 25 to 26 using the two cohorts saved in the above process.

## Generating a Random Sample as Your Audit Cohort

At sites with a large Diabetes Register, you may wish to use a random sample of your active NIDDM patients when running the PCC QA Audit Report. To accomplish this, follow all of the steps described in the previous section to create a template or cohort containing the active NIDDM patients in your register. At the conclusion of that process, you will have a cohort named DM REG NIDDM PTS. Then return to the Case Management System main menu and select Q-Man.

In Q-Man, select the Search mode and use LIVING PATIENTS as your subject. When prompted for an Attribute of Living Patients, enter [DM REG NIDDM PTS to identify your cohort. Q-Man will retrieve your cohort and present you with four options.

Select option 3 to generate a random sample of your cohort. You will then be asked whether you want a specific number of entries in your sample or a percentage of your cohort. Select option 1 and enter the number of patients to include in your sample.

When prompted for another Q-Man attribute, press the RETURN key to bypass the prompt. You will then be given a choice of Q-Man Output Options. Select 4—Store Search Results in a FileMan Template. Enter SAMPLE OF NIDDM PTS as your template name and respond YES when asked if you are adding this new template. Bypass the Description prompt by pressing the RETURN key. When asked if you want to run this job in the background, respond NO. Q-Man will generate your sample cohort, called SAMPLE OF NIDDM PTS, which can then be used in the Diabetes Program QA Audit Report.

## Generating an Audit Sample When You Do Not Have a Diabetes Register

If you have not established your Diabetes Register but want to use the Diabetes Program QA Audit Report, you may build a cohort, or sample cohort, of IDDM and NIDDM patients using Q-Man. With Living Patients as your Q-Man subject, you can use one or more Q-Man attributes to find your diabetic population and save them in a template to be used in the Audit Report. The Q-Man dialogue is as follows. User responses and instructions are in bold type.

```
Subject:  LIVING PATIENTS
Attribute of Living Patients:  DX
Enter DX:  250.00-250.91
    250.00      Diabetes Uncompl Type II/NIDDM      Okay?:  YES
    250.91      Diab W Compl NOS Type I/IDDM      Okay?:  YES
ICD codes in this range =>
(Q-Man lists all codes between 250.00 and 250.91)
Enter Another DX:  (Press RETURN to bypass this prompt.)
Want to save this group for future use?  YES
```

```
Enter Name of Taxonomy:  IDDM & NIDDM ICD CODES
First condition of Diagnosis:  (Press RETURN)
Attribute of Living Patients:  (Press RETURN)
*** Q-Man Output Options ***
Select one of the following:
1 DISPLAY results on the screen
2 PRINT results on paper
3 COUNT 'hits'
4 STORE results of a search in a FM search template
5 SAVE search logic for future use
6 R-MAN special report generator
9 HELP
0 EXIT
Your choice:  4 - Store Results of Search in FileMan Template
Enter the name of the search template:  PTS FOR DM AUDIT REPORT
Are you adding 'PTS FOR DM AUDIT REPORT' as a new sort
template? YES
Description:  (Press RETURN)
Want to run this task in background?  NO
```

Q-Man will display each patient meeting the criteria specified as it stores them in your template called PTS FOR DM AUDIT REPORT. When finished, the number of patients will be displayed.

After using this procedure to create and name a template of IDDM and NIDDM patients, the template can be used in the Audit Report as described on pages 25 to 26.

# Health Summary Items for Diabetes Care

## Case Management System Registers

In the demographic section of the health summary, any Case Management System registers that the patient is a member of will be indicated. For instance, if the patient is in the IHS Diabetes Register, you will see the following message:

ON CMS REGISTER(S): IHS DIABETES

Note that Case Management Registers categorized as confidential will not print on the health summary.

## Diabetes Standard Summary

A special type of health summary for diabetes patients is available—the Diabetes Standard Summary. To print the Diabetes Standard Summary for a diabetic patient, select the Health Summary menu option from the Patient Care Component main menu. When prompted for a health summary type, enter DIABETES STANDARD.

This health summary is identical to the Adult Regular Summary except that it includes a Diabetic Flowsheet at the end of the report. The Flowsheet contains items that should be monitored at each diabetes clinic visit. The Diabetes Standard Health Summary should be routinely printed by Health Records staff for all diabetic clinic visits. A sample Diabetes Flowsheet is shown below. Remember that only data that has been entered into the PCC will show up on the Health Summary Flowsheet.

```

----- FLOWSHEETS (max 1 year) -----
DIABETIC FLOWSHEET
      Wt.   DM Labs   BP       Foot Chk.   DM Meds           Pt Ed
-----
03/11/96  :       :PAP SMEA :       :       :                   :
          :       :R=WNL/No :       :       :                   :
          :       :rma1    :       :       :                   :
-----
09/25/95  :144   :GLUCOSE=:120/90 :       :       :                   :
          :       :250     :       :       :                   :
-----
09/01/95  :       :GLUCOSE= :       :       :                   :
          :       :200     :       :       :                   :
-----
06/29/95  :       :GLUCOSE= :       :       :                   :
          :       :20      :       :       :                   :
          :       :CREATINI :       :       :                   :
          :       :NE=80   :       :       :                   :
-----
05/24/95  :150   :CREATINI :120/80 :       :DIGOXIN 0.25MG TAB = :
          :       :NE=60    :       :       :#15 T1T DY FH       :
-----
05/22/95  :       :CREATINI :       :       :                   :
          :       :NE=50    :       :       :                   :
-----

```

The Flow Sheet will be displayed when a Diabetes Standard Health Summary is retrieved, but only for those patients with a diagnosis of diabetes on the PCC Problem List (ICD codes 250.00 - 250.91).

### **Flowsheet Setup**

Because of variations in the Lab, Drug, and Education Tables at individual RPMS sites, it is necessary to identify the specific lab tests, drugs, and education topics you want included in your Flowsheet. You may need assistance from your Site Manager to perform the necessary Flowsheet setup.

To set up the Flowsheet, you must use the Build Health Summary option on the PCC main menu. From the Build Health Summary menu, select Create/Modify Flowsheet. At the prompt for Flowsheet Name, enter DIABETIC. At the prompt for Item Order, you will need to call up the Lab Result component and enter as members your glucose tests, Hgb/A1C, and urine protein. After entering these lab tests, return to the prompt for Item Order and call up the Medication component. Enter as members the same drugs that you identified when setting up the Audit Report Program. After entering the appropriate medications, return to the prompt for Item Order and select the Patient Education component. Enter as members all education topics with the prefix DM.

For further information on setting up the Diabetic Flowsheet, refer to the Health Summary user's manual.

### **Health Maintenance Reminders**

The following annual diabetes monitoring activities are included on the PCC Preventive Health Maintenance Reminders list:

- DM Cholesterol
- DM Creatinine
- DM Dental Exam
- DM Eye Exam
- DM Foot Exam
- DM Triglycerides

These reminders will appear on the Health Summary of only those patients who meet at least one of the following criteria:

- are a member of a surveillance diabetes taxonomy
- have a diagnosis of diabetes on their PCC Problem List
- have a Purpose of Visit that is one of the diabetic diagnostic codes

Other diabetes monitoring items (urinalysis, PPD, rectal exam, breast exam, pap smear, mammography, review of alcohol use status, and review of tobacco use status) are already included as PCC Reminders for the general adult population.

# Recording Diabetes-Related Data in the PCC

The benefits derived from the many Diabetes Management System outputs described in this manual—the Diabetes Flowsheet, Audit Report, Preventive Maintenance Reminders, and Q-Man retrievals—are dependent upon the completeness, consistency, and quality of data entered into the PCC on a routine basis. The single most critical aspect of PCC data entry is the quality of data recording by health-care providers. The sections below address the areas of PCC data recording by health-care providers that are critical to the success of the Diabetes Management System.

## Purpose of Visit

Purpose of Visit (POV) is by far the most important area of PCC recording. It is essential that this data is extremely legible on the PCC form. Providers should print in the Purpose of Visit section of the form. It is easy for a data entry operator to mistake DM for OM or IDDM for NIDDM when recorded sloppily. Standard terms and abbreviations must be used to avoid miscoding of data. Two frequently encountered problems are:

1. Inappropriate use of the diagnosis Insulin Dependent Diabetes. Administration of insulin to a patient with NIDDM does not change the diagnosis to IDDM. Most Native Americans have NIDDM—even children. Such use of the term Insulin Dependent in the provider's narrative causes the POV to be coded improperly. Consult your Diabetes Control Officer if you have questions about appropriate diagnostic terminology.
2. Failure to preface complications, such as Retinopathy and Neuropathy, with the word Diabetic. This directly affects Purpose of Visit coding. Retinopathy and Diabetic Retinopathy receive significantly different ICD codes. Also, even though a diagnosis of Diabetes is recorded as one POV on the form, recording of Retinopathy as a second Purpose of Visit will not cause the data entry operator to assume that this is Diabetic Retinopathy.

## Problem List

Presence of a diabetes-related diagnosis on the PCC Problem List triggers the generation of the Flowsheet on the Diabetes Health Summary, which is used in the Audit Report and triggers prompting of annual Diabetes Maintenance Reminders. Every diabetic patient should have a form of diabetes added to the Problem List along with an exact or estimated Date of Onset.

## Laboratory Tests

Lab tests are used extensively in the Audit Report, PCC Health Maintenance Reminders, Diabetes Maintenance Reminders, Flowsheet, and Q-Man. The specific tests used are identified on page 30.

In some cases, it is important to know whether a test was performed, even if results are unknown or were not entered in the PCC. Therefore, it is essential that providers initial the appropriate lab boxes on the right side of the PCC Form whenever a test is performed. If a box does not exist for one of the diabetes-related tests, it should be indicated and initialed in the area immediately above the Purpose of Visit section. This data must be recorded on the PCC Form even if you have made a notation on a manual flow sheet in use at your facility. Data recorded on the manual flow sheet is not entered in the PCC.

Some features of the Diabetes Management System require lab test results. Beginning with the installation of RPMS Software Distribution 94.1, the RPMS Laboratory System will be available at all facilities. Most facilities will implement the Lab System in stages. Local Diabetes Coordinators should make every effort to include the diabetes-related tests in the first stage of implementation of the Lab System. The depth of information available from the Health Summary, Flowsheet, DM Audit, and Q-Man are dramatically increased with the addition of lab results.

## Health Factors

Tobacco Use and TB Treatment Status are stored as Health Factors in the PCC. The lists of Tobacco and TB Health Factors are provided on pages 27 and 29-30. Health Factors should be recorded in the right-hand portion of the Purpose of Visit section of the form. They should be prefaced with the mnemonic HF to indicate to the data entry operators what follows. For example:

- HF - Current Smoker
- HF - TB TX Complete

## Examinations

Rectal and breast exams, pap smears, and mammograms should be initialed in the appropriate box on the right side of the PCC Form when they are performed or, in the case of mammograms, when ordered.

The following diabetes-related examinations are included in the PCC:

**Diabetic Foot Check.** A visual inspection for breaks or abnormalities in the cutaneous barrier.

**Diabetic Foot Exam, Complete.** Includes a neurologic exam, vascular exam, and a visual inspection for breaks in the cutaneous barrier or bony deformities.

**Diabetic Eye Exam.** Consists of a dilated eye exam by a trained observer. Mydriatic and nonmydriatic fundal photographs are also acceptable. Visual refractions and exams of the undilated eye with an ophthalmoscope do not qualify.

When these exams are performed, they should be recorded and initialed in the box in the lower-right area of the PCC Form labeled Medications, Treatments, Procedures, Patient Education.

## **Education Topics**

There are now four major categories of PCC Diabetes Education Topics:

- General Information      DM-GI
- Complications            DM-C
- Nutrition                 DM-N
- Exercise                 DM-EX

Whenever patient education is provided, it should be recorded in the box in the lower-right area of the PCC Form labeled Medications, Treatments, Procedures, Patient Education. The codes listed above should be recorded by the provider with the appropriate education topic or sub-topic. The patient's level of understanding (good, fair, poor) should also be recorded, as well as the provider's initials.

These and other diabetes-specific recording procedures should be coordinated with your local PCC Data Entry staff to ensure proper entry of all information required in the Diabetes Management System.

## **Use of Customized PCC**

### **Forms for Diabetes Clinic Visits**

At the local level, it is possible to develop your own customized PCC Diabetes Forms in order to include check boxes for diabetes-monitoring items, such as Foot Check, and for diabetes Patient Education topics. To create customized PCC forms, use the tractor-feed version of the PCC Ambulatory Encounter Record (form #IHS 803-1A). With your local word-processing equipment and software, print the desired specialty items on a few thousand forms. These forms may then be used during diabetes clinic visits in place of the standard PCC Form.